

## REMARKS

Reconsideration of the present patent application is respectfully requested. In the pending Final Office Action, the Examiner has rejected all the claims as further discussed below. It is believed that the analysis and response presented herein show that all of the claims are in condition for allowance. Therefore, in view of the following remarks, reconsideration and allowance of the pending claims are respectfully requested.

The Examiner does not appear to give patentable weight to the elements “adapted to” or “capable of” present in claims 120, 122 and 133. Office Action ¶ 5. These claims have been amended to address the Examiner’s concerns.

In the current Office Action, claims 109-112, 115-116, 121, 128-129, 132 and 139-140 are rejected under 35 U.S.C. §102(e) as being allegedly anticipated by U.S. Publication No. 2006/0033919 to Moshe. Claims 113, 114, 124-127, 134-138, 141 and 142 are rejected as being allegedly unpatentable over Moshe in view of U.S. Patent No. 4,645,921 to Heitmann. Claims 117, 119, 120 and 130 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Moshe in view of U.S. Patent No. 6,075,882 to Mullins. Claims 118, 123, and 143-145 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Moshe in view of U.S. Patent No. 5,732,147 to Tao. Claims 122 and 133 are rejected under 35 U.S.C. §103(a) as being unpatentable over Moshe in view of U.S. Patent No. 6,169,600 to Ludlow.

Independent claim 109 specifically recites “an imaging device defining a field of view, said imaging device imaging a rolled smoking article or filter rod in said field of view.” Independent claim 128 specifically recites the step of “imaging said rolled

smoking article or filter rod within said field of view to form a digital image.”

Independent claim 139 specifically recites “imaging means defining a field of view, said imaging means imaging a rolled smoking article or filter rod in said field of view.” It is respectfully submitted that the above cited elements of Applicants’ claims 109, 128 and 139 are not shown or suggested in Moshe.

The Office Action cites detection unit 40 of the Moshe reference as allegedly disclosing the above cited elements. However, after careful review of the Moshe reference, it becomes clear that Moshe does not disclose an imaging device which images a smoking article. The process and system disclosed in Moshe determines the internal characteristics of a rod of material 12 through the use of an electromagnetic radiation beam source 70. Moshe Fig. 1, ¶ [0114]. The electromagnetic radiation source beam 44 is generated and emitted by electromagnetic radiation beam source 70. *Id.* [0117]. The system allows for the electro-optical inspection of internal properties and characteristics such as density, structure, defects and impurities of volumetric segment 34 of the rod of material 12. *Id.*

However, it is clear that such inspection is not performed through the imaging of rod 12. Detection unit 40 includes a transmitted beam first detector 90 and transmitted beam second detector 92. *Id.* ¶ [0142]. Moshe specifically discloses that the transmitted beam first and second detector 90 and 92 have the structure and function of a light receiving type of device such as a phototransistor, photo-sensitive transducer, a fibro optic guide or a photoelectric element. *Id.* ¶ [0145]. As one in the ordinary skill in the art would appreciate, such elements are not being used to image the rod of material 12, but are instead used to measure the amount of light which passes through the rod of

material 12. As such, Moshe clearly does not disclose the imaging device, step, or means as claimed in independent claims 109, 128 and 139. It is therefore respectfully submitted that the Moshe reference does not anticipate independent claims 109, 128 and 139, and Applicants respectfully request that the rejection of these claims be withdrawn. Because all the pending claims are dependent on one of the allowable independent claims, all pending claims should be allowed on at least that basis. However, they also may be allowable on their own merit.

Additionally, independent claim 109 specifically cites “a rotating mechanism which rotates said smoking article or filter rod about its axis in said field of view.” Independent claim 128 specifically cites the step of “rotating said smoking article or filter rod about its axis in said field of view.” It is respectfully submitted that the above cited elements in Applicants’ claims 109 and 128 are not shown or suggested in Moshe.

The Examiner cites the vortex generating mechanism 130 and gas supply 134 of Moshe as allegedly disclosing the above claim elements. However, after careful review of Moshe, it becomes clear that the gas vortex created around moving rod of material 12 does not actually rotate rod 12. Specifically, Moshe provides that “the flowing gas radially impinges upon *longitudinally* moving rod of material 12 within transparent passageway 22. Moshe ¶ [0249] (emphasis added). “Flowing gas 132 radially impinges upon longitudinally moving rod of material 12 prevents, eliminates or reduces, radially directed vibrating of longitudinally moving rod material 12 in general. *Id.* ¶ [0250]. The Moshe reference later provides various purposes of this gas vortex, one of which being that the operation of vortex generating mechanism 130 corresponds to a kind of gas bearing which assists in producing a smooth and stable longitudinal movement of moving

rod of material 12 along path 20 during the entire electro-optical inspection process. *Id.* ¶ [0257]. A second function of the gas vortex is that of cleaning rod guide unit 14. *Id.* ¶ [0258]. The cleaning function of vortex generating mechanism 130 is a consequence of continuous vertical type of flow of gas flowing within and along a transparent passage way 22. *Id.* Thus, it is clear that Moshe does not disclose or suggest the rotation of rod of material 12. The only movement of rod of material 12 taught is in the longitudinal direction with no rotation about its longitudinal axis, which makes sense in light of the teachings in Moshe because none of the electro-optical inspections being done in Moshe would require the rotation of rod of material 12. This is in stark contrast to the juxtaposed rollers 310, 311, 312 and 313 disclosed in the present application. The rollers in the present application facilitate the testing and measuring of various characteristics of the smoking element. The Moshe reference does not disclose all of the elements recited in independent claims 109 and 128, and for at least that reason the claim rejections to these claims should be withdrawn. Claims 110-127 depend on claim on independent claim 109 and claims 129 through 138 depend on independent claim 128 and for at least that basis are also allowable. They may also be allowable over the references of art on their merit.

Now considering claims 113, 114, 141 and 142, these claims recite one or more sidelights which are positioned laterally and on opposite sides of said optical axis. These claims have been rejected on a combination of Moshe and Heitmann. The Examiner is advised that Heitmann discloses a photoelectric transducer 14 which detects the amount of light which is reflected by a cigarette. The light originates from two light emitting devices 11 and 12. Therefore, Heitmann does not disclose sidelights for illuminating the

field of view for an imaging device. Because all elements of claims 113, 114, 141 and 142 are not disclosed by the Moshe/Heitmann combination, no *prima facie* case of obviousness has been established, therefore the rejection of these claims should be withdrawn.

Regarding claims 124, 134 and 135, the Examiner admits that Moshe fails to disclose detecting the position of a shadow cast by longitudinal seam of the outer layer of the roller smoking article. The Examiner then combines Heitmann with Moshe and suggests that the Moshe/Heitmann combination renders claims 124, 134 and 135 obvious. The Examiner states that Heitmann discloses illuminating the rolled smoking article with multiple illumination sources at different angles, and that this would supposedly allow one of ordinary skill in the art to combine that with the Moshe system to detect the position of a shadow cast along the seam of the outer layer of the rolled smoking article. However, neither the Moshe reference or the Heitmann takes an image of the rolled smoking article. Therefore, it does not appear possible to measure a shadow with the equipment disclosed in either reference. The Moshe/Heitmann combination would therefore not yield the claimed invention because neither reference would be able to discern the difference between the shadow produced by the seam or a defect within the cigarette. This attempt to combine Moshe and Heitmann actually suggests one of the inventive aspects of the claimed invention in that it allows for the determination of more characteristics than was possible with the systems of the prior art. Therefore, the Moshe/Heitmann combination does not yield the invention as claimed in claims 124, 134 and 135, and therefore the rejection of these claims should be withdrawn.

Similarly the Examiner attempts to combine Heitmann with Moshe to find claims 125, 127, 136 and 138 to be unpatentable. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the direction of wrapping of the outer layer of the rolled smoking article and detect the presence of a shadow in one region of interest. First, as presented above, the equipment present in a Moshe/Heitmann combination would not allow for the determination and evaluation of a shadow produced by the outer seam. Therefore, that combination would not yield the claimed invention. Further, because no motivation has been properly recited by the Examiner, no *prima facie* case of obviousness has been made. Therefore, the rejection of claims 125, 127, 136 and 138 should be withdrawn.

Regarding claims 126 and 137, the Examiner admits that Moshe does not disclose the illuminating unit comprising one or more sidelights which are positioned laterally and on opposite sides of said optical axis. Again, the Examiner attempts to combine Heitmann with Moshe to overcome this inadequacy. However, as presented above, Heitmann discloses a photoelectric transducer 14 which detects the amount of light which is reflected by a cigarette. The light originates from two light emitting devices 11 and 12. However, Heitmann does not disclose sidelights for illuminating the field of view for an imaging device. Therefore, the Moshe/Heitmann combination does not teach or disclose the claimed invention. Thus, Applicants respectfully request the rejection of claims 126 and 137 be withdrawn.

Regarding claims 119 and 130, the Examiner notes that Moshe fails to disclose a processor which determines one or more physical properties of a smoking article. The Examiner then attempts to incorporate Mullins to suggest that the Moshe/Mullins

combination would include such a processor. However, the Applicants respectfully maintain that Mullins does not disclose a processor that processes an image to obtain a measurement of the smoking article or filter rod. Therefore, Applicants respectfully request that the rejection of claims 119 and 130 be withdrawn.

Regarding claims 118, 123 and 143-145, the Examiner admits that Moshe fails to specifically disclose a rotating mechanism comprising two juxtaposed rollers. The Examiner then alleges that Tao discloses rollers which are positioned side-by-side so as to define a groove wherein the groove receives the article 70 and a rotating unit 80 that rotates rollers to cause the article to rotate through a complete rotation. First, the Examiner has provided no motivation in which one of ordinary skill in the art would combine Tao with Moshe. Therefore, no *prima facie* case of obviousness has been made. Second, the Moshe/Tao combination would actually teach away from the present invention. In Tao, a motor 80 drives a conveyor 20 which rotates the various rollers. Tao Fig. 1. The units imaged (i.e., the apples) rotate and traverse down the lane in order to be inspected and sorted accordingly. However, as disclosed in the present application, the rollers are used to rotate the unit (i.e., the smoking article) while keeping it in one, stationary position. Traversal up or down the rollers would be undesirable in the context of the pending application as it would complicate the image processing of the smoking article. Therefore, one of ordinary skill attempting to combine the rotational system of Tao, which desires traversal down a lane, with the system of Moshe would actually be taught away from the claimed invention. Therefore, no *prima facie* case of obviousness has been established. The rejection of claims 118, 123 and 143-145 should be withdrawn.

Regarding claims 122 and 133, the Examiner recognizes that Moshe fails to disclose a processor adapted to detection one or more circumferential markers on a rolled smoking article or filter rod which are capable of indicating its rotational orientation. The Examiner notes that Ludlow shows in Fig. 3A circumferential markers on a rolled smoking article. However, again, the system of Moshe would be unable to utilize the circumferential markers of Ludlow as the Examiner suggests. First, the detection means of Moshe would be unable to verify and utilize the circumferential markers as the photoelectric detectors provided therein would be unable to identify the position of the markers as the article is being inspected. Secondly, as discussed above, Moshe does not provide the rotation of rod of material 12. Therefore, the circumferential markers of Ludlow would be of no use on the non-rotating rod of material 12 in Moshe. Because the Moshe/Ludlow combination does not teach or suggest claims 122 and 133, the rejection of these claims should be withdrawn.

Accordingly, the Examiner is respectfully requested to indicate the allowability of claims 109-145. The Examiner is encouraged to contact the undersigned to resolve any outstanding matters concerning the present application.

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